EPA REVIEW COMMENTS

QUALITY ASSURANCE PROJECT PLAN
SUBMITTED 25 AUGUST 1990

GENERAL COMMENTS

The document submitted reflects considerable confusion over the nature and purpose of various documents required by the IAG. We now have a QAPP, QAPjP, QAA, and QSS. Of these only the QAPP is an IAG requirement; the QAPP has disappeared and the QAPjP taken its place. The others have been added to the stack which now threatens to collapse under its own weight. If this documentation is to provide the working instructions for remedial investigations required to ensure quality results, some streamlining is sorely needed. EPA would be happy to discuss how this can best be done.

The document format (and a fair amount of the content) appears to have been borrowed from existing documents developed for RFP production operations. Environmental Restoration (ER) activities differ from production control tasks to an extent which often causes this attempted graft of dissimilar species to fail. For example, Section 3.0 attempts to impose "Design Control" concepts on data validation efforts; at the same time it says this QAPjP is not applicable to design, engineering, or construction of ER facilities. The result is that most critical data required to evaluate data validation procedures (such as acceptance criteria) are excluded in favor of vague procedural generalities, while engineering QA appears in another document which is unavailable for review. As is the case with many QAPjP sections, we are left with a long discussion lacking substance.

In several instances, critical information is not presented, instead being referenced as included in the GRRASP (or the RFP SOW GRRASP). This document must either be provided for review or the sections relevant to QA/QC incorporated in the appropriate QAPjP sections. Any references to other documents must include page numbers so that the information can be readily accessible.

The function of a quality assurance plan is to define in detail the policies, organization, objectives, functional activities, and specific QA and QC activities used to achieve specific tasks. In this case, these tasks are to efficiently and successfully complete field measurements to characterize the nature and extent of contamination, determine associated risks to human health and the environment, develop alternatives for remedy selection, and ultimately select a remedy that meets the cleanup criteria required under CERCLA. The submitted plan falls short in meeting the scope by addressing issues only in generalities. Many sections overlap, and contain information irrelevant to Environmental Restoration activities. A common problem

throughout the QAPjP is the lack of explanation of how tasks will be accomplished. Any references to other documents must include page numbers so that the information can be readily accessed.

SPECIFIC COMMENTS

Executive Summary. A flow diagram illustrating the relationship between the different documents submitted under the SOPs and QAPjP must be provided for clarification. The diagram must include the SOPs, SOPAs, WPs, FSPs, QAAs and QSSs.

Table of Contents. Figures and Tables are not identified.

Acronyms and Abbreviations. ANSI, FSP and SOPA must be added to the list.

Introduction, Page xv. - The IAG does allow for the use of the Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual which supercedes the Superfund Public Health Evaluation Manual. Section VII.D of the Statement of Work states, "DOE shall use the procedures in SPHEM or superceding EPA documents..."

Introduction and Scope, p.xvii. - Mixed wastes were also stored and disposed of at on-site locations. Figure 1 lacks a scale, is not mentioned in the text and is not numbered in the same manner as the other figures (i.e. Figure 1.1). Figures 1-1 and 1-2 must be updated to reflect recent changes.

Quality Assurance Officer. - The QAO must also oversee QA/QC requirements outlined in the SOPs.

Section 1.3. - The document discusses the responsibilities of the key people involved in establishing and maintaining proper QA/QC but does not describe how the responsibilities will be achieved.

Section 2.3. - The site-specific field plans and standard operating procedures must be submitted as part of the site-specific work plan which is required to be submitted for EPA/CDH review under the IAG.

Section 2.4, Page 13. - The type of training involved must be stated.

Section 2.4, Page 2-3. - The training attendance sheet must indicate the title of the training.

Section 3. - In general, this section does not address the methods by which the data will be analyzed.

Section 3.3.1. - The broad description of Data Quality Objectives (DQOs) should not limit the concept to quality of measurement

data alone, but should encourage use of DQOs in design of all aspects of investigations (e.g. field sampling design, data analysis, etc.).

Section 3.3.2.- Approved SOPs won't be identified in the SAP, they are part of the SAP, of which this QAPjP is supposed to be the other part. Specific reference should be made to the pertinent SOPs and this section should explain what measures will be employed to maintain QA/QC of sampling procedures during field activities. Particular attention should be paid to devising methods to maintain QA/QC when numerous field crews from several consulting firms will be performing the same sampling procedure in different OUs.

This section should discuss the sampling procedures requirements in more detail, and use the SOPs to fulfill these requirements. The sampling procedures should include but not be limited to:

- A description of techniques or guidelines used to select sampling sites.
- A description of containers, procedures, reagents, and so forth, used for sample collection, preservation, transport, and storage.
- A list of analytes and sample volumes to be collected.
- Sampling methods (composite, grab, etc.)
- A discussion of special conditions for the preparation and cleaning of sampling equipment, containers, reagents and supplies to avoid sample ccontamination.
- A discussion of the time considerations for shipping samples promptly to the laboratory.
- Calibration of equipment.
- Preservation, transportation, and storage.
- Holding times of samples, before and after extraction, are applicable.
- Sample custody or chain-of-custody procedures (to be discussed later in this document).
- Forms, notebooks, and procedures to be used to record sample history, sampling conditions and analyses to be performed.

Section 3.3.2, Page 20. - New or revised SOPs must be submitted as part of the workplans for the specific operable unit for which

they apply and the site-wide SOP must be revised to reflect any changes.

Section 3.3.3, Page 21.- This section and section 3.3.6 appear to address the same issues; they are contradictory and incomplete. Pertinent items from the guidelines referenced on page 24 should be incorporated in and/or appended to the QAPjP. Data received by EMAD must be verified as to proper input into the RFEDS database system. Explain how the independent validation of analytical results will occur.

Section 3.3.3.1, Page 21. - The list of field operations and sampling records is not complete and must include those identified in the SOPs. Any changes to the data must be recorded in such a manner that the changes can be easily tracked in the RFEDS system. All changes must have an accompanying explanation for the change.

Section 3.3.3.2. - Part of the provisions for field data "validation" should include the need for appropriate replication of field samples. Although these considerations should be an integral part of the DQO process for individual projects, a reference should be included in this generic project plan.

Section 3.3.3.2, Page 22. - DQO's must not be deferred to the site specific WP/FSP/QAAs. Rather a list of site-wide DQOs is necessary which can be amended in the site-specific documents. General schedules must be identified for the verification and validation process.

Section 3.3.3.2, Page 23. - The person(s) responsible, as identified in the SOPs for the field validation must be stated in the QAPjP also. Validation guidelines and DQOs must be presented in this document. (CDH validation guidelines may be appropriate and need to be investigated.) The data validation subcontractor must be identified in the organizational charts.

Section 3.3.3.3, Page 26. - Table 3-1 should be revised to reflect the steps outlined in Figure 3-1 and the 30-day validation process. Explain the validation process and the need for the 30-day turn-around time.

Section 3.3.4, Page 26. - The SOPs do not discuss the field preparation of the sample bottles. The SOPs which direct field preparation of sample bottles must be listed.

Section 3.3.4.1, Page 28.- The reference to SOPs prepared in 1989 must be updated to indicate the pertinent current SOP(s). The frequency of field duplicate, trip blanks, and equipment rinsate blanks must be defined for sites under investigation that may have less than 20 samples. Spiked samples are also a part of QA/QC programs listed in the SOPs and must be listed here.

Section 3.3.4.1, Page 29.- Please explain why no mention is made of including Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in the QA/QC program. These provide a valuable measure of laboratory precision and accuracy in a specific environmental matrix, and can assist data interpretation, particularly for soil analytical results.

Section 3.3.4.1.1, Page 29. - The SOP which describes collection of field duplicate samples must be identified.

Section 3.3.4.1.2. - It is recommended that the equipment rinsate blank collection procedure for VOCs specify collection directly into the sample container unless the design of the equipment precludes the efficient collection of the rinsate. It is also recommended that the rinsate contact time with the sampling equipment reflect actual contact time of a typical sample.

Section 3.3.4.1.2, Page 29. - The SOP which describes collection of equipment rinsate blanks must be identified. Basic needs for rinsate analysis must be provided in the QAPjP.

Section 3.3.4.1.3. - Collection of VOC sample trip blanks is not specified, apparently as a result of lack of commercially available blanks. It is recommended that VOC soil sample trip blanks consisting of contaminant free soil be prepared and utilized. Soil matrix differences between the blank soil and the VOC soil sample are not significant provided that the blank solid matrix will document VOC cross contamination problems. If a background soil sample that is free of contaminants cannot be found, then an appropriate soil could be heated until all VOCs are driven off. The blank soil should be sampled before use to verify that it is contaminant free. The VOC trip blanks should be collected in the same containers and handled in the same way as the investigative samples.

Section 3.3.4.1.3, Page 29. - The SOP which describes collection of trip blanks must be identified.

Section 3.3.4.2, Page 30. - The Laboratory Quality Control Procedures must be provided.

Section 3.3.6, Page 33. - Proper handling (i.e. bottles, preservatives and temperatures) must be added as an objective. Primary validation criteria are not identified. An explanation of acceptance criteria is needed. Usable and unusable data must be provided in RFEDS with qualifiers indicating which validation criteria were not satisfied.

Section 5.3.2. - The section discusses the requirement that SOPs contain quantitative or qualitative acceptance criteria. However, the SOPs do not contain data quality objectives which

specify the acceptance criteria. Therefore, the criteria must be specifically outlined in the QAPjP or in the revised SOPs and the SOPAs. Additionally, not all SOPs contain the information necessary to establish traceability of standards, instrumentation, samples, calibrations, and environmental data.

Section 5.3.8.2, Page 43.- If this provision is to be used, and "temporary" procedural changes made based on a determination that said change is "not important" to the regulating agencies, these terms must be defined and the person(s) empowered to make such a determination identified.

Section 6.1, Page 46.- This purpose sounds very impressive; the subsequent sections don't come anywhere near serving it. In fact they contain very little of substance. If there is really no more to be said about the issue, this section should be dropped.

Section 8.0.- Most information presented here is not appropriate for running an RI program. The one relevant portion, (8.3.2 Samples) says little except that sample labeling procedures will be provided in the WP/FSP/QAA. This is definitely not where labeling procedures should be, as they are not specific to an OU, but should be consistent over all the RFP RI work. Detailed labeling protocols must be provided in the SOPs and/or the QAPjP, with appropriate cross-references provided. Similarly, Chain of Custody procedures (8.3.2.4) must be completely detailed in the SOP/QAPjP not in the as yet unseen GRRASP.

Section 8.3.1.1, Page 52. - Use of paint is not prudent where environmental sampling is involved.

Section 8.3.2.1, Page 53. - The COC procedure described in section 8.3.2.4 and in the SOPs can be referred to.

Section 8.3.2.2, Page 54. - Sample identification can be uniform and the method of identification can be spelled out in the SOPs or QAPjP and need not be deferred to the workplans.

Section 8.3.2.3, Page 55. - This section references the GRRASP for QA/QC information relating to more than just radionuclides. The section is grossly inadequate and at least should reference the SOP which details the information.

Section 8.3.2.6, Page 55. - Where specific State regulations apply, the QAPjP or SOPs must identify the regulations and their applicability. It is not sufficient to state that regulations will be followed. If samples are shipped by air carrier, then air regulations must also be referenced.

Figure 8-1. - A better explanation for the figure is required. It is apparent that screening levels for radionuclides apply. The persons responsible and the methods of the screening and

entire chain of custody sample flow is necessary. The SOPs must be modified to include the screening level information indicated in the figure.

Sections 8.3.2.7 and 8.3.3. - These sections discuss the goal of the activity but not how the goal will be accomplished.

Section 9.0.- Please explain this baffling discussion and the purpose of including it; or take it out.

Section 9.0, Page 60. - If the sections mentioned do not pertain to the ER program, explain why they are presented in this document.

Section 10.3.2, Page 62. - An explanation of hold points is necessary. The inspection planning must include knowledge and review of the Federal and State regulatory requirements and agreements with EPA and CDH.

Section 10.3.3, Page 63. - The text lacks coherence and alludes to staged inspections (i.e. final inspections). The inspection process needs a more detailed and meaningful explanation.

Section 10.3.6, Page 64. - The corrective action and corrective dispositions must also be added.

Section 11.1, Page 65. - The section does not cover the scientific investigation activities. Environmental restoration activities will involve several test procedures. Will these procedures be evaluated?

Section 12.3.4. - This section refers to written procedures used for equipment calibration. These procedures must be included in this document for evaluation by EPA. Information on calibration procedures for each type of equipment must be presented.

Section 12.3.5. - The respective preventive maintenance procedures and schedules for field equipment and laboratory equipment are not presented. They must be included in this document in order for EPA to evaluate them.

Section 13.3, Page 74. - What is needed are the actual procedures referenced, not some suggestions for developing them.

Section 13.3.1, Page 74. - This section must be specific to the SOPs pertaining to handling, storage, and shipping of all wastes.

Section 13.3.2, Page 75. - The items that must have traceability maintained, must be listed.

Section 14. - Once again, the meaning of this section and the purpose of including it are unclear. Explain specifically how

"physical status indicators or reporting documentation" apply to the ER program. The parenthetical insertion of "treatability, aquifer tests, etc." doesn't help much.

Section 15. - These procedures appear to be designed for segregating off-specification mechanical assemblies; they are not necessarily germane here.

Section 15.3.5, Page 82. - Explain how the QAO and the WMC (as designated in the SOPs) will coordinate responsibilities.

Section 17. - There is no justifiable reason for deferring record keeping requirements to the QAA. They must be included here.

Section 17.3, Page 88. - The record location and person(s) responsible for record control must be provided.

Section 17.3.7, Page 92. - The documents involved with the IAG must be preserved greater than the 10-year period specified, as the goal of remedial actions is to achieve permanent remedies.

Section 18.2, Page 93. - Define the various type of verification activities: audits, surveillances, assessments, reviews, and inspections.

Section 18.3.1, Page 93. - The frequencies of verification activities must be determined but the schedule should remain confidential for some activities for accomplishing independent oversight.

Section 18.3.1.5, Page 96. - Field audits must be conducted for IM/IRAs and effectiveness of any cleanup activities.

Section 19.3, Page 103. - QA/QC of the database system is necessary in general. Especially important is the data entry verification. These matters must be addressed.

APPENDIX A. - Data Quality Objective Development Process

Figure A1.2. - The figure is not legible.

Specify Objectives/Decisions, Page 7. - Another important objective of the remedial action program is to determine risks to human health and the environment. Risk analysis is then used in determining the type of remedy and if an interim measure/interim remedial action is required.

Figure A8. - The conceptual model must also account for determining the extent of contamination. The use of institutional controls is not a preferred remedy.

Figure A1.2, Page A12. - Geologic samples (i.e. borehole samples,

and soil gas samples) and hydrologic information (i.e. water-level measurements) must be added to the figure.

Identify Data Types, Page A13. - Meteorological data and soil moisture data are needed for implementation of remedial activities.

Identify Data Types, Page A15. - Radiochemistry analyses must be performed for subsurface samples also.

Identify Data Quality Needs, Page A15. - The sample frequency must also be addressed.

Table A1.3. - The table is difficult to read due to copying of the small print.

Table A1.4. - Headings are difficult to read.

Table A1.5. - A column needs to be added for subsurface samples. The table and instruction sheet are not legible.

Review PARCC Parameter Information, Page A16. - Establishment of PARCC parameters is a site-wide issue and must be addressed in this section.

APPENDIX B - References

See also "Guidance for Data Useability in Risk Assessment, USEPA/540/G-90/008, October 1990."